

# List of All Chemicals

## P **Euphrasia officinalis (Scrophulariaceae)**

### Common name(s)

Eyebright

### How used

Medicinal

\*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
6-HYDROXYPHENYL PYRUVIC-ACID	Plant	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
ALUMINUM	Plant	15.3	99.0	-0.56	*
<b>Activities (5)</b>					
Antisilicotic					Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.
Antivaginitic					Martindale's 28th
Candidicide					Martindale's 28th
Encephalopathic					Martindale's 29th
Pesticide					
APIGENIN	Plant	--	--		*
<b>Activities (101)</b>					
11B-HSD-Inhibitor					
AntiADD					
AntiHIV IC72=200 ug/ml					
AntiHIV IC50=143 ug/ml					
Antiaflatoxin IC50=9.52 uM					
Antiaflatoxin IC50=2.57 ppm					
Antiaggregant					
Antiaging					
Antiallergic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiangiogenic 4 uM					
Antiarrhythmic					
Antibacterial					Recio, M. C., Rios, J. L., and Villar, A. A review of some antimicrobial compounds isolated from medicinal plants reported in the literature 1978-1988, Phytotherapy Research, 3(4), 1989, 117-125.
Anticancer (Lung)					
Anticomplementary					
Antidermatitic					Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Antiestrogenic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiherpetic 20-54 ug/ml					
Antihistaminic IC50=10-35 uM					
Antiinflammatory #NAME?					
Antiinflammatory IC~65=1,000 uM					
Antileukemic 20-50 uM					
Antimelanomic 1-50 uM					
Antimetastatic 1-50 uM					
Antimutagenic ID50=10-40 nM					Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507. ACS, Washington 402 pp.
Antimutagenic ID50=0.55 ug/ml					
Antioxidant 1.5 x Vit. E					
Antioxidant IC28.5=62.5 ug/ml					
Antiperistaltic					
Antiproliferant 1-50 uM					
Antiproliferant IC50=155 uM					
Antispasmodic EC50=1-5 uM					

Antithyroid	Jim Duke's personal files.
Antitumor 1-50 uM	
Antitumor (Breast) 1-50 uM	
Antitumor (Lung)	
Antitumor (Skin)	
Antiviral 20-54 ug/ml	
Anxiolytic 10 mg/kg	
Apoptotic 12-60 uM	
Aromatase-Inhibitor IC50=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=~40 uM	
CNS-Depressant	
COX-1-Inhibitor IC50=1,000 uM	
COX-2-Inhibitor IC>65=1,000 uM	
COX-2-Inhibitor <40 uM	
COX-2-Inhibitor IC50=<15 uM	
Calcium-Antagonist?	Biochimica & Biophysica Acta, 1115: 69, 1991.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic	
Cyclooxygenase-Inhibitor	
Cytochrome-P450-1A1-Inhibitor	
Cytotoxic IC88=10 ug/ml	Planta Medica, 57: A113, 1991.
Cytotoxic 1-50 uM	
Cytotoxic IC50=9.5 uM	
DNA-Protective	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator MIC=30 uM	
Differentiator IC40=40 uM	
Diuretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Estrogenic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
Estrogenic 16% genistein	
Estrogenic EC50=1 uM	
HIF-1alpha-Inhibitor	
Hyaluronidase-Inhibitor IC50+=50-250 uM	
Hypotensive	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
ICAM-1-Inhibitor	
IKK-Inhibitor	
Inotropic	
Interleukin-6-Inhibitor	
MAO-Inhibitor	
MAPK-Inhibitor	
Musculotropic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Mutagenic	
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
NADH-Oxidase-Inhibitor	
NF-kB-Inhibitor	
NO-Synthase-Inhibitor 5-50 uM	
Nodulation-Signal	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Ornithine-Decarboxylase-Inhibitor	
P21-Inducer 10-70 uM	
PKC-Inhibitor IC50=10 uM	
PTK-Inhibitor 10-100 uM	
Pesticide	
Polyamine-Synthesis-Inhibitor	
Progesterational	
Protein-Kinase-C-Inhibitor IC50=10-40 uM	
Quinone-Reductase-Inducer 20 uM	Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In Vitro by Flavonoids. <i>Cancer Lett.</i> , 120 (2): 213-216.
Radioprotective	

Sunscreen					
TNF-alpha-Inhibitor					
IC50=3.27 uM					
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. <i>Toxicol Ind Health</i> , 14: 223-237.				
Topoisomerase-II-Inhibitor 50 ug/ml	Azuma, Y., Onishi, Y., Sato, Y., Kizaki, H. 1995. Effects of Protein Tyrosine Kinase Inhibitors With Different Modes of Action on Topoisomerase Activity and Death of IL-2-Dependent CTLL-2-Cells. <i>J Biochemistry</i> , 118: 312-318.				
Topoisomerase-II-Inhibitor IC28=18 uM					
Topoisomerase-II-Inhibitor IC45=180 uM					
Uterotrophic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.				
VEGF-Inhibitor IC50=2-7 uM					
Vasodilator					
Xanthine-Oxidase-Inhibitor 0.36 uM					
iNOS-Inhibitor IC50=<15 uM					

APIGENIN-7-RHAMNOGALACTOSIDE	Shoot	--	--	Jim Duke's personal files.		
APIGENIN-GLYCOSIDE	Plant	--	--	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.		
ARABINOSE	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.		
ASCORBIC-ACID	Plant	10.0	67.0	-0.58	*	

#### Activities (112)

Acidulant FEMA 6,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Aldose-Reductase-Inhibitor	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Analgesic 5-10 g/day	
Angiotensin-Receptor-Blocker	
AntiAGE 2,000 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
AntiCFS 500-1,000 mg	
AntiCTS 1,000 mg 3x/day	
AntiCrohn's 50-100 mg/day/orl/man	Martindale's 29th
AntiLyme 500-2,000 mg	
AntiRaynaud's 500 mg 1-2x/day	
Antiaggregant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antiaging 400 mg/day	
Antiallergic	
Antialzheimeran 2,000-6,000 mg/day	
Antiarthritic 0.2-1 g/day	
Antiasthmatic 1,000 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiatherosclerotic	
Antibacterial	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Anticataract 350 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticataract 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Anticataract 1 g 3x/day	
Anticervicaldysplastic 1,000-2,000 mg/day	
Anticlimacteric 500-5,000 mg/day	
Anticold 1-2 g/man/day	
Antidecubitic 500 mg/man/2x/day	Martindale's 28th
Antidementia	
Antidepressant 2,000 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antidiabetic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Aluminum)	Economic & Medicinal Plant Research, 6: 189.
Antidote (Cadmium)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidote (Lead)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidote (Paraquat)	Martindale's 28th
Antieczemic 3.5-5 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiedemic 1 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.

Antiedometriotic 2,000 mg/day	
Antifatigue 500-1,000 mg	
Antifibrotic 1,000-2,000 mg	
Antigallstone 1,000-3,000 mg/day	
Antigastritic	
Antigingivitic	
Antiglaucomic 2 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antihangover 1,000 mg	
Antihemorrhagic 1 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihepatitic 2-6 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihepatotoxic	Economic & Medicinal Plant Research, 6: 189.
Antiherpetic 1-5 g/day	
Antihistaminic 2 g/day orl man	
Antihypertensive	
Antiinfertility 1 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiinflammatory	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antilepric 1.5 g/man/day	Martindale's 28th
Antilithic 1,000-3,000 mg/day	
Antimaculitic	
Antimeasles	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antimenopausal 500-5,000 mg/day	
Antimigraine	Martindale's 29th
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuramidase	
Antinitrosic 1 g/man/day	Martindale's 28th
Antiobesity 1 g 3x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiorchitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antosteoorarthritic 1 g 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antosteoporotic 500 mg/day	
Antioxidant 100 ppm	
Antiparkinsonian 1 g 2-3x/day	
Antiparotitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiperiodontic 1 g 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antipneumonic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antipodriac	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antipoliomyletic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antipyretic	Economic & Medicinal Plant Research, 6: 189.
Antiradicular	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reverse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antiretinotic	
Antirheumatic	
Antirhinitic 1,000 mg 3x/day	
Antiscorbutic 10 mg/man/day	Martindale's 28th
Antiseptic MIC=3.3-217 mg/ml	Martindale's 28th
Antiseptic 4-8 g/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reverse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antishingles	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antispasmodic 500-5,000 mg/day	
Antistress 500-1,000 mg	
Antisyndrome-X 1-4 g/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reverse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antitumor (Gastric)	
Antitumor (Lung)	
Antiulcer	
Antiviral 1-5 g/day	
Apoptotic 1-10 mM	
Asthma-preventive 1,000 mg/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Adrenergic Receptor Blocker	
Beta-Glucuronidase-Inhibitor 1.5 g/day/man	
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Cold-preventive 1-2 g/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Collagenic	

Diuretic 700 mg/man/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Fistula-Preventive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Hypocholesterolemic 300-1,000 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypoglycemic	
Hypotensive 1,000 mg/man/day	
Immunomodulator	
Immunostimulant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Interferonogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Lithogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Mucolytic 1 g/woman/day	Martindale's 28th
Pesticide	
Uricosuric 4 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Urinary-Acidulant	Martindale's 29th
Vasodilator	
Vulnerary	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

ASH	Plant	19404.0	126000.0	0.09	*
AUCUBIN	Plant	--	500.0	0.0	*

#### Activities (20)

Antibacterial	
Antidote (Amanitin) 200 mg/kg ipr mus	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 276.
Antiedemic 1/2 indomethacin	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Antiinflammatory IC50=12-72 uM	
Antiinflammatory 1/2 indomethacin	
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antioxidant	
Antiprolactin	
Antistaphylococcic	
Candidicide	
Cathartic ED50=390 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Collagenic	
Diuretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hepatoprotective	
Lactagogue	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Laxative	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Paralytic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Pesticide	
RNA-Inhibitor	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 275.
Uricosuric	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

AUCUBIN	Shoot	--	--	Jim Duke's personal files.
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#### Activities (20)

Antibacterial	
Antidote (Amanitin) 200 mg/kg ipr mus	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 276.
Antiedemic 1/2 indomethacin	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Antiinflammatory IC50=12-72 uM	
Antiinflammatory 1/2 indomethacin	
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antioxidant	
Antiprolactin	
Antistaphylococcic	
Candidicide	
Cathartic ED50=390 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Collagenic	

Hepatoprotective					
Lactagogue	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.				
Laxative	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
Paralytic	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.				
Pesticide					
RNA-Inhibitor	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 275.				
Uricosuric	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				

BETA-CAROTENE	Plant	11.0	73.0	-0.33	*
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### Activities (53)

Allergenic					
Androgenic?	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
AntiPMS					
Antiacne	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiaging					
Antiarthritic					
Antiasthmatic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.				
Anticarcinomic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Anticervicaldysplastic					
Anticorony 50 mg/man/2 days					
Antihyperkeratotic					
Antiichthythic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antileukoplakic					
Antilipoperoxidant IC71=50 ug/ml					
Antilupus 150 mg/man/day/2 mos	Martindale's 28th				
Antimaculitic					
Antimastitic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.				
Antioxidant	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiozenic					
Antipapillomic					
Antiphotothobic 30-300 mg/man/day	Martindale's 29th				
Antipityriasic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiporphyrin 30-300 mg/man/day	Martindale's 28th				
Antiprofiferant	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.				
Antipsoriac	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiradicular	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antirheumatic					
Antistress	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.				
Antitumor	Simon, P.W. Carrots and Other Horticultural Crops as a Source of Provitamin A Carotenes. <i>HortScience</i> , 25(12): 1495, 1990.				
Antitumor (Breast) IC45=60 ug/ml					
Antitumor (CNS) IC43=45 ug/ml					
Antitumor (Colon) IC43=45 ug/ml					
Antitumor (Lung) IC30=60 ug/ml					
Antitumor (Prostate)					
Antitumor (Stomach) IC26=45 ug/ml					
Antiulcer 12 mg 3x/day/man/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiulcer 15,000-25,000 IU/day					
Antixerophthalmic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.				
COX-1-Inhibitor IC78=50 ug/ml					
COX-2-Inhibitor IC82=50 ug/ml					
Cancer-Preventive 22 ppm	Jim Duke's personal files.				
Chemopreventive					
Colorant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Gastroprotective					
Immunostimulant 180 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Interferon-Synergist					
Mucogenic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Phagocytotic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Prooxidant 20 ug/g					

Ubiquot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
BETA-SITOSTEROL	Plant	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<b>Activities (47)</b>				
Androgenic				
Angiogenic				
Anorexic	Martindale's 28th			
Antiadrenomic	Merck 11th Edition			
Antiandrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.			
Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103.			
Anticancer (Cervix)				
Anticancer (Lung)				
Antiedemic IC54=320 mg/kg orl				
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
Antifertility	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Antigonadotropic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Antihyperlipoproteinaemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antiinflammatory				
Antileukemic				
Antilymphomeric				
Antimutagenic 250 ug/ml				
Antiphidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.			
Antioxidant IC44=10 uM				
Antiprogestational	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Antiprostaglandin 30 mg/day/12 wks	Antiprostaglandin 30 mg/day/12 wks			
Antiprostatadenomic	Merck 11th Edition			
Antiprostatic 10-20 mg 3 x/day/orl man				
Antipyretic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.			
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103.			
Antitumor (Cervix)				
Antitumor (Lung)				
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in Artemisia annua. Plant Science, 75: 161-165, 1991.			
Apoptotic				
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. Phytochemistry, 29(5): 1667-1670. 1990.			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.			
Caspase-8-Inducer				
Estrogenic				
Febrifuge	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.			
Gonadotropic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Hepatoprotective				
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th			
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th			
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. Journal of Ethnopharmacology, 27: 243-275, 1989.			
Hypolipidemic 2-6 g/day				
Pesticide				
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.			
Ubiquot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Ulcerogenic 500 mg/kg ipr rat				

CAFFEIC-ACID	Shoot	--	6000.0	1.71	Jim Duke's personal files.
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#### Activities (102)

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. Sankyo Kenkyusho Nempo, 43: 99-110.
Allergenic	
Analgesic	

AntiLegionella	
Antidienviral	Economic & Medicinal Plant Research, 5: 207.
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiaging	
Antitherapeutic	
Antibacterial	
Anticancer	
Anticarcinogenic	Economic & Medicinal Plant Research, 6: 189.
Antidepressant	
Antiedemic	Economic & Medicinal Plant Research, 6: 189.
Antielastase IC50=93 uM/l	
Antielastase IC50=86 ug/ml (475 uM)	
Antiescherichic	
Antiflu	Economic & Medicinal Plant Research, 5: 207.
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 25 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatoadenomic 200 ppm diet orl mus	
Antihapatotoxic	
Antiherpetic 50 ug/ml	
Antiherpetic EC50=>50 ug/ml	
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene	
Antimelanogenic	
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antiophidic	
Antioxidant 50 uM	
Antioxidant IC57=30 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 30 mM	
Antioxidant 1.3 x Vit. E	
Antioxidant 1/2 BHA	
Antiperoxidant IC50=44 uM	Planta Medica, 57: A54, 1991.
Antiperoxidant IC35=200 ug/ml	
Antiperoxidant IC85=100 ug/ml	
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antiprostaglandin	
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	Phytotherapy Research, 4: 73.
Antistaphylococcic	
Antistomatisic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	Cancer Research, 48: 5941.
Antiulcerogenic	
Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
COX-2-Inhibitor IC32=100 uM	

Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
DNA-Protective	
Diuretic	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart.</i> 393 pp.
Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. ( <i>Asteraceae</i> ). <i>Economic Botany</i> 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Pesticide	
Prooxidant	
Prostaglandigenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC98=25 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Tumorigenic	Jim Duke's personal files.
Vulnerary	
Xanthine-Oxidase-Inhibitor IC50=39.21 uM	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.

CAFFEIC-ACID Plant -- 11500.0 0.73 Tyler, V.E.. 1982. *The Honest Herbal*. George F. Stickley Co., Philadelphia PA. 263 pp.

#### Activities (102)

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allergenic	
Analgesic	
AntiHIV EC50=200 ug/ml	
AntiLegionella	
Antidiaboviral	Economic & Medicinal Plant Research, 5: 207.
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiaging	
Antiatherogenic	
Antibacterial	
Anticancer	
Anticarcinogenic	Economic & Medicinal Plant Research, 6: 189.
Antidepressant	
Antiedemic	Economic & Medicinal Plant Research, 6: 189.
Antielastase IC50=93 um/l	
Antielastase IC50=86 ug/ml (475 uM)	
Antiescherichic	
Antiflu	Economic & Medicinal Plant Research, 5: 207.

Antihemolytic 25 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatoadenomic 200 ppm diet orl mus	
Antihepatotoxic	
Antiherpetic 50 ug/ml	
Antiherpetic EC50=>50 ug/ml	
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene	
Antimelanogenic	
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antiphidic	
Antioxidant 50 uM	
Antioxidant IC57=30 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 30 mM	
Antioxidant 1.3 x Vit. E	
Antioxidant 1/2 BHA	
Antiperoxidant IC50=44 uM	Planta Medica, 57: A54, 1991.
Antiperoxidant IC35=200 ug/ml	
Antiperoxidant IC85=100 ug/ml	
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antiprostaglandin	
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	Phytotherapy Research, 4: 73.
Antistaphylococcic	
Antistomatitic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	Cancer Research, 48: 5941.
Antiulcerogenic	
Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	
COX-2-Inhibitor IC32=100 uM	Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
DNA-Protective	

Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Pesticide	
Prooxidant	
Prostaglandigenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. Fitoterapia 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. Fitoterapia 64(2): 134-136, 1993.
Sunscreen IC98=25 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. Fitoterapia 64(2): 134-136, 1993.
Tumorigenic	Jim Duke's personal files.
Vulnerary	
Xanthine-Oxidase-Inhibitor IC50=39.21 uM	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.

CALCIUM	Plant	1771.0	11500.0	-0.22	*
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#### Activities (28)

AntiPMS 1 g/day	
Antiallergic 500 mg/day	
Antianxiety	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiarrhythmic 500-1,500 mg	
Antiarthritic 1,000 mg/day	
Antiatherosclerotic 500 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticlimacteric 1,000-1,500 mg/day	
Antidepressant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Aluminum)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Lead)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihyperkinetic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihypertensive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiinsomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimenopausal 1,000-1,500 mg/day	
Antiobesity	
Antiosteoporotic 500-2,000 mg/day	
Antiperiodontic 750 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antirheumatic 1,000 mg/day	
Antistress 500-1,500 mg/day	
Antitc	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anxiolytic 500-1,500 mg/day	
Calcium-Channel-Blocker	
Diuretic	
Hypocholesterolemic 500 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Hypotensive 1 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Laxative 1,000-1,200 mg	
Tranquilizer 500-1,500 mg/day	
Vasodilator	

CARBOHYDRATES	Plant	113652.0	738000.0	0.42	*
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CATALPOL	Plant	--	--		*
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#### Activities (3)

Cathartic ED50=340	Wagner & Wolff. eds. 1977. New Natural Products (RS164. I56. 176)
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Diuretic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Purgative

CERYL-ALCOHOL

Plant -- -- \*

CHOLINE Plant -- -- Tyler, V.E.. 1982. The Honest Herbal. George F. Stickley Co., Philadelphia PA. 263 pp.

**Activities (20)**

Antialzheimeran 5-16 g/man/day

Antichoreic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Anticirrhotic 6,000 mg/man/day

Anticystinuric

Antidementia

Antidiabetic

Antidyskinetic 150-200 mg/kg/man/day Martindale's 28th

Antihomocysteine

Antimanic 15-30 g/man/day/orl

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antinociceptive

Antisteatotic

Cardiodepressant

Cerebrotonic

Cholinergic Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Hepatoprotective

Hypotensive

Ileorelaxant

Lipotropic

Memorigenic

Parasympathomimetic (1/1,000th acetylcholine) Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.

CHROMIUM

Plant 0.1 0.7 -0.8 \*

**Activities (24)**

Amphiglycemic? Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

AntiAGE 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

AntiCFS 200 ug

Antiacne

Antiaging 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Antiatherosclerotic 20 ug/day

Anticorneotic Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antidiabetic 200-1,000 ug

Antidote (Lead) Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antifatigue 200 ug

Antiglycosuric 200-1,000 ug

Antiobesity 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Antisyndrome-X 200-800 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Antitriglyceride 20 ug/day Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antitriglyceride 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Cardioprotective

Energizer

Hypocholesterolemic 20 ug/day Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Hypocholesterolemic 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Hypoglycemic 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Hypotensive 200-1,000 ug Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Immunomodulator

Insulinogenic

Memorigenic

CHRYSOERIOL

Shoot -- -- Jim Duke's personal files.

**ACTIVITIES (7)**

Aldose-Reductase-Inhibitor IC31=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Anticomplementary	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antioxidant	
Antirhinoviral	Economic & Medicinal Plant Research, 5: 197.
Antiviral	Economic & Medicinal Plant Research, 5: 197.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

## CHRYSOEROL-7-RHAMNOGALACTOSIDE

Shoot -- -- Jim Duke's personal files.

## COBALT

Plant 2.3 14.7 0.0 \*

**Activities (2)**

Cardiomyopathogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Erythrocytogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

## DEHYDROCONIFERYL-ALCOHOL-4-BETA-D-GLYCOSIDE

Plant -- -- Bisset, N.G., ed. 1994. *Herbal Drugs and Phytopharmaceuticals*. CRC Press. Boca Raton, FL. 566 pp.

## DIOSMETIN

Plant -- -- Jim Duke's personal files.

**Activities (13)**

Aldose-Reductase-Inhibitor IC17=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Antialzheimeran	
Antidementia	
Antimutagenic ID50=10-40 nM	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antirhinoviral	Economic & Medicinal Plant Research, 5: 197.
Antiviral	Economic & Medicinal Plant Research, 5: 197.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Estrogenic EC50=2.9 uM	
NO-Inhibitor EC50=19 uM	
Osteoblastogenic	
PPAR-Gamma-Antagonist	
TNF-alpha-Inhibitor IC50=3.27 uM	
TNF-alpha-Inhibitor EC50=39 uM	

## EO

Plant 1500.0 2000.0 -0.59 \*

## EUKOVOSIDE

Plant -- 263.6 \*

## EUPHROSIDE

Plant -- -- Bisset, N.G., ed. 1994. *Herbal Drugs and Phytopharmaceuticals*. CRC Press. Boca Raton, FL. 566 pp.

## FAT

Plant 1386.0 9000.0 -0.62 \*

## FERULIC-ACID

Plant -- -- Tyler, V.E.. 1982. *The Honest Herbal*. George F. Stickley Co., Philadelphia PA. 263 pp.**Activities (61)**

Allelopathic	Holappa, L.D., and Blum*, U. 1991. Effects of Exogenously Applied Ferulic Acid, a Potential Allelopathic Compound, on Leaf Growth, Water Utilization, and Endogenous Abscisic Acid Levels of Tomato, Cucumber, and Bean. <i>J. of Chemical Ecology</i> , 17(5): 865.
Analgesic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 69.
Antiaggregant	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.
Antiallergic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiarrhythmic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary</i> . A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticancer (Colon)	
Anticancer (Fore stomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidysmenorrheic	
Antiestrogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary</i> . A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary</i> . A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antimutagenic	Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18.
Antineoplastic (Stomach)	
Antinitrosaminic	Ki Soon Rhee. <i>Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18.
Antioxidant 3,000 uM	
Antioxidant IC51=200 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 1/2 BHA	
Antioxidant EC50=9-15 ug/ml	
Antiradicular EC50=9-15 ug/ml	
Antiradicular IC50=116-124 uM	
Antiserotonin	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antispasmodic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antithrombic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antitumor (Colon)	
Antitumor (Fore stomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC46=10 uM	Cancer Research, 48: 5941.
Antiviral	Vlietinck, A.J. and Dommisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Arteriodilator	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Cardiac	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.
Cholagogue	Pharmazie, 46: 156, 1991.
Choleretic	Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Hepatoprotective	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingston, Edinburgh.
Hepatotropic	
Herbicide	Angewandte Botanik 68(5/6)=1994. Page 195.
Hydrocholerectic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Hypolipidemic	
Immunostimulant	Economic & Medicinal Plant Research, 1: 124.
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994.
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Pesticide	
Phagocytotic	
Preservative	Merck 11th Edition
Prostaglandigenic	
Prostaglandin-Synthesis-Inhibitor 0.58-3.2 mM	Xu, L. N., Yu, W. G., Tian, J. Y., Liu, Q. Y. 1990. Effect of Sodium Ferulate on Arachidonic Acid Metabolism. <i>Yao Hsueh Hsueh Pao</i> , 25(6): 412-416.
Sunscreen	Chemical Marketing Reporter; a weekly tabloid, 9/10/92.
Uterosedative 30-100 mg/kg ivn rat	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.

FIBER

Plant

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91000.0 -0.97

Pedersen, M. 1987. *Nutritional Herbology*. Pederson Publishing. Bountiful, Utah. 377 pp.

#### Activities (15)

Angiotensin-Receptor-Blocker  
Antidiabetic  
Antihypertensive

Antitumor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antilulcer	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Blocker	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Diuretic	
Hypocholesterolemic	
Hypotensive 10 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypouricemic	
Laxative	
Vasodilator	

FIBER(CRUDA)	Plant	--	91000.0	-0.24	*
FIBER(DIETARY)	Plant	--	292000.0	-0.78	*
GALACTOSE	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

#### Activities (1)

Sweetener 0.32 x sucrose Martindale's 28th

GALLIC-ACID	Shoot	--	--	Jim Duke's personal files.
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#### Activities (62)

ACE-Inhibitor IC50=7.7 mM/l

Analgesic  
AntiHIV  
AntiMRSA  
Antiadenovirus Economic & Medicinal Plant Research, 5: 194.  
Antiallergenic Dorsch, W., Wagner, H. New Antiasthmatic Drugs from Traditional Medicine? Int Arch Allergy Appl Immunol 94: 262-265, 1991.  
Antianaphylactic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Antiangiogenic  
Antiasthmatic Watt, J.M., and Breyer-Brandwijk, M.G. The Medicinal and Poisonous Plants of Southern and Eastern Africa. 1962.

Antibacterial MIC=1,000 ug/ml  
Antibronchitic Dorsch, W., Wagner, H. New Antiasthmatic Drugs from Traditional Medicine? Int Arch Allergy Appl Immunol 94: 262-265, 1991.

Anticancer  
Anticarcinomic ED50=3  
Antiescherichic

Economic & Medicinal Plant Research, 1: 53.

Antiflu Economic & Medicinal Plant Research, 5: 194.

Antihepatotoxic Okuda, T., Yoshida, T., and Hatano, T. Antioxidant Effects of Tannins and Related Polyphenols. Phenolic Compounds in Food and Their Effects on Health, Ch.7 p.93.

Antihperitic EC50=>10 ug/ml

Kroes, B.H., et al. 1991. Anti-Inflammatory Activity of Gallic Acid. Planta Medica, 58(6): 499.

Antiinflammatory  
Antileishmanic EC50=4.4 ug/ml

Economic & Medicinal Plant Research, 6: 235.

Antimutagenic

Antinitrosaminic

Antioxidant IC44=33 ppm

Antioxidant 7 x quercetin

Antioxidant 2/3 BHA

Antiperiodontitic 10 ug/ml

Antiperoxidant IC50=69 uM

Antipolio

Economic & Medicinal Plant Research, 5: 194.

Antiproteolytic 10 ug/ml

Antiradicular 7 x quercetin

Antiradicular IC50=4.9 uM

Antiseptic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Antistaphylococic MIC=1,000 ug/ml

Antitumor

Antiviral	
Apoptotic	
Astringent	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Bacteristat	Lamikanra, A., Ogundaini, A.O., and Ogunbamila*, F.O. Antibacterial Constituents of Alchornea cordifolia Leaves. <i>Phytotherapy Research</i> 4(5): 198.
Bronchodilator	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Carcinogenic	
Choleretic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Cyclooxygenase-Inhibitor	
Cytotoxic 500 uM	
Floral-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Gram(+)icide MIC=1,000 ug/ml	
Gram(-)icide MIC=1,000 ug/ml	
Hemostat	
Hepatoprotective	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Immunomodulator	
Immunostimulant	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82.
Immunosuppressant	
Insulin-Sparing	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
NO-Inhibitor IC-26=250 uM	
Nephrotoxic	Martindale's 29th
Pesticide	
Styptic	
Topoisomerase-I-Inhibitor	Hamada, S. I., Kataoka, T., Woo, J. T., Yamada, A., Yoshida, T., Nishimura, T., Otake, N., Nagai, K. 1997. Immunosuppressive Effects by Gallic Acid and Chebulagic Acid on CTL-Mediated Cytotoxicity. <i>Biol Pharm Bull</i> , 20: 1017-1019.
Xanthine-Oxidase-Inhibitor IC50=24 uM	Hatano, T., Yasuhara, T., Yoshihara, R., Agata, I., Noro, T., and Okuda, T. 1989. Effects of Interaction of Tannins with Co-existing Substances.VII. Inhibitory Effects of Tannins Related Polyphenols on Xanthine Oxidase. <i>Chem. Pharm. Bull.</i> 38(5): 1224-1229

GALLIC-ACID	Plant	--	--	*
<b>Activities (62)</b>				
ACE-Inhibitor IC50=7.7 mM/l				
Analgesic				
AntiHIV				
AntiMRSA				
Antiadenovirus	Economic & Medicinal Plant Research, 5: 194.			
Antiallergenic	Dorsch, W., Wagner, H. New Antiasthmatic Drugs from Traditional Medicine? <i>Int Arch Allergy Appl Immunol</i> 94: 262-265, 1991.			
Antianaphylactic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Antiangiogenic				
Antiasthmatic	Watt, J.M., and Breyer-Brandwijk, M.G. <i>The Medicinal and Poisonous Plants of Southern and Eastern Africa</i> . 1962.			
Antibacterial MIC=1,000 ug/ml				
Antibronchitic	Dorsch, W., Wagner, H. New Antiasthmatic Drugs from Traditional Medicine? <i>Int Arch Allergy Appl Immunol</i> 94: 262-265, 1991.			
Anticancer				
Anticarcinomic ED50=3				
Antiescherichic				
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.			
Antiflu	Economic & Medicinal Plant Research, 5: 194.			
Antihepatotoxic	Okuda, T., Yoshida, T., and Hatano, T. Antioxidant Effects of Tannins and Related Polyphenols. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.7 p.93.			
Antihemperitic EC50=>10 ug/ml				
Antiinflammatory	Kroes, B.H., et al. 1991. Anti-Inflammatory Activity of Gallic Acid. <i>Planta Medica</i> , 58(6): 499.			
Antileishmanic EC50=4.4 ug/ml				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
Antinitrosaminic				
Antioxidant IC44=33 ppm				
Antioxidant 7 x quercetin				
Antioxidant 2/3 BHA				

ug/ml				
Antiperoxidant IC50=69 uM				
Antipolio	Economic & Medicinal Plant Research, 5: 194.			
Antiproteolytic 10 ug/ml				
Antiradicular 7 x quercetin				
Antiradicular IC50=4.9 uM				
Antiseptic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.			
Antistaphylococcic MIC=1,000 ug/ml				
Antitumor				
Antitumor-Promoter				
Antiviral				
Apoptotic				
Astringent	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.			
Bacteristat	Lamikanra, A., Ogundaini, A.O., and Ogungbamila*, F.O. Antibacterial Constituents of Alchornea cordifolia Leaves. Phytotherapy Research 4(5): 198.			
Bronchodilator	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Candidicide				
Carcinogenic				
Choleretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Cyclooxygenase- Inhibitor				
Cytotoxic 500 uM				
Floral-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Gram(+)icide MIC=1,000 ug/ml				
Gram(-)icide MIC=1,000 ug/ml				
Hemostat				
Hepatoprotective	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.			
Immunomodulator				
Immunostimulant	McKenna, D. J., Hughes, K., and Jones, K. 2000. Green Tea Monograph. Alternative Therapies, 6(3): 61-82.			
Immunosuppressant				
Insulin-Sparing	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
NO-Inhibitor IC- 26=250 uM				
Nephrotoxic	Martindale's 29th			
Pesticide				
Styptic				
Topoisomerase-I- Inhibitor	Hamada, S. I., Kataoka, T., Woo, J. T., Yamada, A., Yoshida, T., Nishimura, T., Otake, N., Nagai, K. 1997. Immunosuppressive Effects by Gallic Acid and Chebulagic Acid on CTL-Mediated Cytotoxicity. Biol Pharm Bull, 20: 1017-1019.			
Xanthine-Oxidase- Inhibitor IC50=24 uM	Hatano, T., Yasuhara, T., Yoshihara, R., Agata, I., Noro, T., and Okuda, T. 1989. Effects of Interaction of Tannins with Co-existing Substances.VII. Inhibitory Effects of Tannins Related Polyphenols on Xanthine Oxidase. Chem. Pharm. Bull. 38(5): 1224-1229			

GALLOTANNINS                   Plant     30000.0    80000.0                   List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

GENIPOSIDE                   Plant     --        --                   \*

#### Activities (10)

Antibacterial				
Anticlastogen				
Antimutagenic				
Antioxidant				
Antitumor-Promoter				
Cathartic ED50=300 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)			
Choleretic				
Hepatoprotective				
Laxative				
Pesticide				

GLUCOSE                   Plant     --        --                   Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Acetylcholinergic	
Antiedemic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antihepatotoxic	Merck 11th Edition
Antiketotic	Merck 11th Edition
Antivaricose	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Hyperglycemic	Merck 11th Edition
Memory-Enhancer	Science News, 138: 189, 1990.

IRON Plant 5.0 31.0 -0.7 \*

#### Activities (6)

Antiakathisic	Martindale's 29th
Antianemic	Martindale's 29th
Anticanker	
Anticheilitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Antimennorrhaic 100 mg/day/wmn/orl	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Prooxidant	

ISOQUERCITRIN Plant -- -- \*

#### Activities (22)

ACE-Inhibitor ID50=300 ug/ml rat (24 hr.)	
Aldose-Reductase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Anticancer	
Antielastase IC50=0.7 ug/ml	
Antifeedant	Russell, G. B., <i>Phytochemical resources for crop protection, N. Z. J. Technol.</i> , 2, 1986, 127-134.
Antiinflammatory	
Antinociceptive	
Antioxidant 1/4 quercetin	
Antioxidant IC50=9.0 uM	
Antiradicular 1/4 quercetin	
Antitumor	
Antitumor-Promoter	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillarogenic	
Diaphoretic	
Diuretic 10 ppm	List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Hypotensive	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Pesticide	
TNF-alpha-Inhibitor	
Topoisomerase-II-Inhibitor 550 ug/ml	Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. <i>Antimicrobial Agents &amp; Chemotherapy</i> , 41: 992-998.

IXOROSIDE Plant -- -- Bisset, N.G., ed. 1994. *Herbal Drugs and Phytopharmaceuticals.* CRC Press. Boca Raton, FL. 566 pp.

KAEMPFEROL Plant -- -- Jim Duke's personal files.

#### Activities (75)

11B-HSD-Inhibitor	
5-Lipoxygenase-Inhibitor IC50 (uM)=20	
Aldose-Reductase-Inhibitor 100 uM	Oliveira, T. T., Nagem, T. J., Miranda, L. C. G., Paula, V. F., Teixeira, M. A. 1997. Inhibitory Action on Aldose Reductase by Soybean Flavonoids. <i>J Braz Chem Soc</i> , 8(3): 211-213.
Antiaflatoxin IC50=8.73 uM	
Antiaflatoxin IC50=3.28 ppm	
Antiaggregant 30 uM	
Antiallergic	
Antibacterial 20 ug/ml	
Anticancer	

mg/kg/day/00 days/00 rat	IMPORTANT PLANT SPECIES. PLANTES MEDICINALES ET PHYTOTHERAPIE, 25. 1995-201, 1989.
Antigingivitic 20 ug/ml	
Antiherpetic 23-92 ug/ml	Amoros, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. <i>J. of Natural Products</i> 55(12):1732-1740, 1992.
Antihistaminic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antiimplantation	
Antiinflammatory 20 mg/kg	
Antiinflammatory 200 mg/kg ipr rat	
Antileukemic IC50=3.1 ug/ml	Life Sciences 55: 1061.
Antilymphocytic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimutagenic ID50=10-40 nM	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507. ACS, Washington 402 pp.
Antioxidant IC50=40 uM	
Antioxidant 3/4 quercetin	
Antioxidant IC50=1.2 ug/ml	
Antiperiodontic 20 ug/ml	
Antiplaque 20 ug/ml	
Antiradicular 7 x quercetin	
Antiseptic 20 ug/ml	
Antiserotonin 200 mg/kg ipr rat	
Antispasmodic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antistaphylococcic	
Antitumor	
Antitumor-Promoter	Yasukawa, K., Takido, M., Takeuchi, M., Sato, Y., Nitta, K., and Nakagawa, S. 1989. Inhibitory Effects of Flavonol Glycosides on 12-O-Tetradecanoylphorbol-13-acetate-Induced Tumor Promotion. <i>Chem. Pharm. Bull.</i> 38(3): 774-776, 1990.
Antiulcer 50-200 mg/kg ipr rat	
Antiviral 23-92 ug/ml	
Apoptotic 60 uM	
Aromatase-Inhibitor IC12=1 uM/l	Journal of Medicinal Food 2: 235.1999.
COX-2-Inhibitor	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Choleretic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Copper-Chelator	
Cyclooxygenase-Inhibitor IC50 (uM) =20	
Cytotoxic	
Diaphoretic?	Lawrence Review of Natural Products, Dec-90.
Diuretic	
Estrogenic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
Estrogenic EC50=0.56 uM	
Fungicide 20 ug/ml	Father Nature's Farmacy: The aggregate of all these three-letter citations.
HIV-RT-Inhibitor IC50=50-150 ug/ml	Garcia, J., Morin,* C., Nyasse, B., Sondengam, B-L., Tchouankeu, J-C., and Tsamo, E. Complete Structural Assignments Of An Ergosterol Derivative From Entandrophragma utile. <i>Journal of Natural Products</i> , 54(1): 136-142, 1991.
Hepatoprotective IC50=5.46 uM	
Hepatoprotective IC50=1.30 ppm	
Hypotensive	
ICAM-1-Inhibitor	
Inotropic	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
JNK-Inhibitor	
Lipoxygenase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
MAO-Inhibitor	
Mutagenic	
NO-Inhibitor IC50=13.9 uM	
Natriuretic	
Neuroprotective	
PAF-Inhibitor	
Pesticide	

Quinone-Reductase-Inducer 3 uM	
TNF-alpha-Inhibitor IC50=3.99 uM	
Teratologic	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. <i>Toxicol Ind Health</i> , 14: 223-237.
Topoisomerase-II-Inhibitor IC50=8.1 ug/ml	Constantinou, A., Mehta, R., Runyan, C., Rao, K., Vaughan, A., Moon, R. 1995. Flavonoids as DNA Topoisomerase Antagonists and Poisons: Structure-Activity Relationships. <i>J Natural Products</i> , 58: 217-225.
Tyrosinase-Inhibitor ID50=230 uM	
Uterotrophic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
Vasodilator	
cAMP-Phosphodiesterase-Inhibitor	
iNOS-Inhibitor IC50=<15 uM	
iNOS-Inhibitor IC50=13.9 uM	

KAEMPFEROL-3-O-RUTINOSIDE	Shoot	--	--	Jim Duke's personal files.	
KILOCALORIES	Plant	--	2540.0	-0.7	Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing. Bountiful, Utah. 377 pp.
LUPROSIDE	Plant	--	--	*	
LUTEOLIN	Shoot	--	--	Jim Duke's personal files.	

**Activities (78)**

Aldose-Reductase-Inhibitor EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. <i>Fitoterapia</i> 64(2): 130, 1993.
Aldose-Reductase-Inhibitor IC50=0.45 uM rat	
AntiHIV	
Antiallergic	
Antiangiogenic IC60-75=10' uM	
Antiatherogenic	
Antibacterial MIC=500 ug/ml	Planta Medica, 57: A43, 1991.
Anticarcinogenic	
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Anticataract EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. <i>Fitoterapia</i> 64(2): 130, 1993.
Anticomplementary	
Antidermotic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.
Antiestrogenic	
Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antiherpetic 11-23 ug/ml	
Antihistaminic <10-15 uM	
Antiinflammatory #NAME?	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antileukemic 20-50 uM	
Antilymphomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antimelanomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antimutagenic ID50=2-5 nM	
Antimutagenic ID50=0.44 ug/ml	
Antinociceptive	
Antioxidant IC50=10 uM	
Antipolio	Economic & Medicinal Plant Research, 5: 197.
Antiproliferant	
Antispasmodic	Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antitumor 1-50 uM	
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.

Antitumor (Skin) 20 uM	
Antitumor (Stomach)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Thyroid) 12-50 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitussive	
Antiviral 11-23 ug/ml	
Aphidifuge	
Apoptotic 12-50 uM	
Aromatase-Inhibitor IC50=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=~40 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic 1-50 uM	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator IC>40=40 uM	
Diuretic	Jim Duke's personal files.
Estrogenic 58% genistein	
Hepatoprotective	
Hyaluronidase-Inhibitor IC50+=100-250 uM	
Hypocholesterolemic	
ICAM-1-Inhibitor	
IKK-Inhibitor	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Lipoxygenase-Inhibitor	
MAPK-Inhibitor	
MMP-9-Inhibitor 20 uM	
Metalloproteinase-Inhibitor	
Myorelaxant	
NEP-Inhibitor IC50=>42 uM	
NF-kB-Inhibitor	
NO-Inhibitor	
PTK-Inhibitor 10-100 uM	
Pesticide	
Prolif erant	
Prostaglandin-Synthetase-Inhibitor	
Protein-Kinase-C-Inhibitor IC70=50 uM	
Succinoxidase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
TNF-alpha-Inhibitor IC50=14.44 uM	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. <i>Phytoestrogens: Potential Endocrine Disruptors in Males</i> . <i>Toxicol Ind Health</i> , 14: 223-237.
VEGF-Inhibitor IC50=2-7 uM	
Vasodilator	
Xanthine-Oxidase-Inhibitor IC50=0.11 ug/ml	Chem. & Pharm. Bull. 38: 1772.
iNOS-Inhibitor	

LUTEOLIN-7-RHAMNOGALACTOSIDE Shoot -- -- Jim Duke's personal files.

MAGNESIUM Plant 641.0 4160.0 0.03 \*

### Activities (65)

- AntiCFS
- AntiLyme 400-1,000 mg
- AntiMS
- AntiPMS 400-800 mg/day/wmn/orl
- AntiPMS 400-800 mg/day/wmn orl

mg/day

Antiaggregant 400 mg/day	
Antialcoholic	
Antiangular 400 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antianorectic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antianxiety 400 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiarrhythmic 400 mg/day	
Antiarthritic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiasthmatic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antithrombotic 400 mg/day	
Antitachycardic	
Antitachyarrhythmic	
Antineuritic	
Antineuritic 500-750 mg/day	
Anticonvulsant	Facciola, S. 1998. <i>Cornucopia - A Source Book of Edible Plants</i> . Kampong Publications, Vista CA. 713 pp.
Anticoronal 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidepressant	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidiabetic 400-800 mg/man/day	
Antidysmenorrheic 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiedometriotic 500 mg/day	
Antienteric	
Antiepileptic 450 mg/day	
Antifatigue	
Antifibromyalgic 200-300 mg 3x/day	
Antigastric	
Antiglaucomic	
Antihyperkinetic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihypertensive	
Antihypoglycemic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antinflammatory 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiinsomniac	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antilithic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimastalgic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimenopausal 500-750 mg/day	
Antimigraine 200 mg/day/man	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antimital-valve-prolapse	
Antinephrolytic	
Antineurotic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antosteoporotic 500-1,000 mg/day/wmn/orl	
Antiplaque 500-1,000 mg/day	
Antiretinopathic 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antispasmodic	
Antispasmophilic 500 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antistress 500-750 mg/day	
Antistroke 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antisyndrome-X 400 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Anxiolytic 500-750 mg/day	
CNS-Depressant	Facciola, S. 1998. <i>Cornucopia - A Source Book of Edible Plants</i> . Kampong Publications, Vista CA. 713 pp.
Calcium-Antagonist	
Cardioprotective	
Diuretic	
Hypocholesterolemic 400 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Hypotensive 260-500 mg/day	
Immunomodulator	
Insulinogenic 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Laxative 300-500 mg/day	
Litholytic	
Myorelaxant 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Neurotransmitter	
Tranquilizer 500-750 mg/day	
Uterorelaxant 100 mg 4 x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Vasodilator	

MANGANESE	Plant	2.0	12.6	-0.6	*
<b>Activities (14)</b>					
AntiPMS					
Antialcoholic	Forest H. Nielsen, USDA, Grand Forks, various publications.				
Antianemic	Martindale's 28th				
Antiarthritic					
Antidiabetic 3-5 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antidiabetic 10-30 mg/man/day					
Antidiscotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antidyskinetic	Martindale's 28th				
Antiepileptic 450 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antosteoporotic					
Antitotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antioxidant					
Antisyndrome-X 10-30 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reverse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Hypoglycemic 10-30 mg/man/day					
NIACIN	Plant	52.0	337.0	3.65	*
<b>Activities (39)</b>					
Allergenic	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
AntiLyme 50 mg/day					
AntiMeniere's	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.				
AntiRaynaud's 1,500-4,000 mg/day					
Antiacrodynic					
Antiallergic 50 mg/2x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antialzheimeran					
Antiambyopic					
Antianginal					
Anticataract					
Antichilblain	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Anticonvulsant 3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antidementia					
Antidermatitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antidiabetic					
Antidysphagic					
Antiepileptic 3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antihangover 50 mg					
Antihistaminic 50 mg 2x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antihyperactivity 1.5-6 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiinsomniac 1 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antineuragic					
Antiparkinsonian 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antipellagric	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antiscotomic					
Antispasmodic 100 mg 2x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antivertigo					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Cardioprotective					
Circulotonic					
Fibrinolytic					
Hepatoprotective					
Hepatotoxic					
Hypocholesterolemic 50-100 mg 3x/day					
Hypoglycemic					
Hypolipidemic					
Sedative	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Serotonergic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Vasodilator	Martindale's 29th				
NONACOSANE	Plant	--	--	*	
<b>Activities (2)</b>					

ug/ml

Antiviral

Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in *Artemisia annua*. *Plant Science*, 75: 161-165, 1991.

PHENYLCARBOXYLIC-ACIDS

Plant

--

--

\*

PHOSPHORUS

Plant

323.0

2100.0

-0.72

\*

**Activities (4)**

Antiosteoporotic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Anxiolytic

Immunostimulant

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Osteogenic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

POTASSIUM

Plant

2002.0

13000.0

-0.61

\*

**Activities (14)**

Angiotensin-Receptor-Blocker

Antiarrhythmic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antidepressant

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antifatigue

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antihypertensive

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antispasmodic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antistroke

Anxiolytic

Beta-Blocker

Cardioprotective 3,000-5,000 mg

Cardiotoxic 18,000 mg/man/day

Diuretic

Hypotensive

Vasodilator

PROTEIN

Plant

19558.0

127000.0

-0.38

\*

QUERCETIN

Plant

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\*

**Activities (176)**

11B-HSD-Inhibitor

5-Lipoxygenase-Inhibitor  
IC50 (uM)=4Nigg, H.N. and Seigler, D.S., eds. 1992. *Phytochemical Resources for Medicine and Agriculture*. Plenum Press, New York. 445 pp.ATPase-Inhibitor  
Aldehyde-Oxidase-Inhibitor IC70-96=10 uM

Aldose-Reductase-Inhibitor 100 uM

Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. *Sankyo Kenkyusho Nempo*, 43: 99-110.

Aldose-Reductase-Inhibitor IC50=0.84 ug/ml cow

Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387

Aldose-Reductase-Inhibitor IC50=0.344 uM

Mao, X. M., Zhang, J. Q. 1993. Inhibition of Aldose Reductase by Extracts of Chinese Herbal Medicine. *Zhongguo Zhongyao Zazhi* , 18(10): 623-624.

Allelochemical IC82=1 mM

Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, *Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology*, v. 4, Oryx Press, Phoenix, 1989, 267pp.

Allergenic

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Analgesic

AntiCrohn's 400 mg/man/3x/day

Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine*. John Bastyr College Publications, Seattle, Washington (Looseleaf).

AntiGTF ID50=120 ug/ml

AntiHIV

AntiPMS 500 mg/2x/day/wmn

Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine*. John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiaflatoxin IC50=25 uM

Antiaflatoxin IC50=7.5 ppm

Economic &amp; Medicinal Plant Research, 5: 333.

Antiaggregant IC50=55 uM

Antiaggregant 30 uM

Antiaging

Antiallergic IC50=14 uM Jim Duke's personal files.

Antialzheimeran

Meli, R., Autore, G., Di Carlo, G., Capasso, F. Inhibitory Action of Quercetin on Intestinal Transit in Mice. *Phytotherapy Research* 4(5): 201, 1990.

Antianaphylactic

Antiangiogenic

Antiasthmatic	IC50=14 uM
Antiatherosclerotic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Anticarcinomic (Breast) IC50=1.5 uM	Medline (post 1990 searches filed in my computer)
Anticariogenic ID50=120 ug/ml	
Anticataract	
Anticolitic 400 mg/man/3x/day	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticomplementary	
Anticystitic 1,000 mg/day/4 weeks	
Antidepressant	
Antidermatitic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antidiabetic	
Antielastase IC50=0.8 ug/ml	
Antiecephalitic	Economic & Medicinal Plant Research, 5: 199.
Antiescherichic	
Antiestrogenic	
Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antifibrosarcomic	
Antiflu	Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research.</i> Wiss. Verlag. Stuttgart.
Antigastric	Rastite l'nye Resursy, 21: 85.
Antigonadotropic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antihepatotoxic	Joyeux, M., Rolland, A., Fleurentin, J., Mortier, F., and Dorfman, P. 1989. <i>Tert-Butyl Hydroperoxide-Induced Injury in Isolated Rat Hepatocytes: A Model for Studying Anti-Hepatotoxic Crude Drugs.</i> <i>Planta Medica</i> 56(2): 171-173, 1990.
Antiherpetic 48-150 ug/ml	
Antihistaminic IC50=<10 uM	
Antihydrophobic	Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research.</i> Wiss. Verlag. Stuttgart.
Antihypertensive	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs.</i> CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory 20-150 mg/kg	Fitoterapia No.5-1990.
Antileishmanic IC50=64	
Antileukemic IC50=10 uM	Economic & Medicinal Plant Research, 5: 225.
Antileukemic IC50=>10 ug/ml	Life Sciences 55: 1061.
Antileukemic 5.5-60 uM	
Antileukotriene	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antilipoperoxidant IC67=50	
Antimalarial IC50=1-6.4 ug/ml	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.
Antimelanomic	
Antimetastatic	
Antimutagenic ID50=2-5 nM	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antimutagenic ID50=0.62 ug/ml	
Antimycarditic	Economic & Medicinal Plant Research, 5: 199.
Antinitrosaminic	
Antinociceptive	
Antioxidant IC96=300 ppm	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antioxidant ED50=2.3 uM	Seidel, V., Verholle, M., Malard, Y., Tillequin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98.
Antioxidant 4.7 x Vit. E	
Antioxidant IC47=10 uM	
Antipancreatic	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code.</i> Hyperion, NY.
Antiperiodontal	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiperistaltic	
Antipermeability	
Antiperoxidant	Planta Medica, 57: A110, 1991.
Antipharyngitic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiplaque	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiplasmodial IC50=13-64	
Antipodriac	
Antipolio	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine.</i> John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiproliferant 10 nM	

Antiprostatic	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Antipsoriac	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiradicular IC50=4.6 uM	<i>Planta Medica</i> , 56(6): 695, 1990.
Antispasmodic	
Antistreptococcic ID50=120 ug/ml	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithrombic	
Antitypanosomal IC50=13	
Antitumor 10 uM	
Antitumor (Bladder)	
Antitumor (Breast)	
Antitumor (Colon)	
Antitumor (Lung)	
Antitumor (Ovary)	
Antitumor (Skin) 20 uM	
Antitumor-Promoter	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer	
Antiviral IC50=10 uM	Economic & Medicinal Plant Research, 5: 225.
Antiviral 48-150 ug/ml	Amoros, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. <i>J. of Natural Products</i> 55(12):1732-1740, 1992.
Apoptotic 20-60 uM	
Bacteristat 10 mg/ml	
Bradycardiac	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
COMT-Inhibitor	
COX-2-Inhibitor <40 uM	
Calmodulin-Antagonist	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Capillariprotective	Merck 11th Edition
Carcinogenic 40,000 ppm (diet) mus	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Catabolic	
Copper-Chelator	
Cyclooxygenase-Inhibitor	
Cytochrome-P450-1A2-Inhibitor	
Cytotoxic ED50=70 ug/ml	Matsukawa, Y., et al. The Effect of Quercetin and Other Flavonoids on Cell Cycle Progression and Growth of Human Gastric Cancer Cells. <i>Planta Medica</i> , 56(6): 677, 1990.
Cytotoxic IC82=100 ug/ml	<i>Planta Medica</i> , 57: A113, 1991.
Deiodinase-Inhibitor	Jim Duke's personal files.
Diaphoretic?	Lawrence Review of Natural Products, Dec-90.
Differentiator 5.5 uM	
Estrogenic 10% genistein	
Fungicide	
Glucosyl-Transferase-Inhibitor ID50=120 ug/ml	
HIV-RT-Inhibitor IC50=<1 ug/ml	Nakane, H., Fukushima, M., and Ono*, K. Differential Inhibition Of Reverse Transcriptase And Various DNA Polymerases By Digallic Acid And Its Derivatives. <i>Journal of Natural Products</i> , 53(5): 1234-1240, 1990.
Hemostat	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Hepatomagenic 5,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. <i>Antioxidants &amp; Cancer Prevention</i> . Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Hepatoprotective	
Hypoglycemic 100 mg/kg or rat	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Inotropic	
Insulinogenic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Juvabional	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Larvistat 8,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Lipoxygenase-Inhibitor IC11=1.25 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690.
Lipoxygenase-Inhibitor IC50=0.1-5 uM	
MAO-A-Inhibitor	
MMP-9-Inhibitor 20 uM	
Mast-Cell-Stabilizer	
Metal-Chelator (Copper)	Seidel, V., Verholle, M., Malard, Y., Tillequin, F., Fruchart, J-C., Duriez, P., Bailleul, F., Teissier, E. 2000. Phenylpropanoids from <i>Ballota nigra</i> L. Inhibit in vitro LDL Peroxidation. <i>Phytotherapy Research</i> , 14(2): 93-98.
Metalloproteinase-Inhibitor IC50=>42 uM	

NADH-Oxidase-Inhibitor	
NEP-Inhibitor IC50=>42 uM	
NF-kB-Inhibitor	
NO-Inhibitor IC>50=125 uM	
NO-Inhibitor IC50=20 uM	
NO-Synthase-Inhibitor 5-50 uM	
Neuroprotective 5-25 uM	
Ornithine-Decarboxylase-Inhibitor <10 uM	
P450-Inducer 5 uM	Father Nature's Farmacy: The aggregate of all these three-letter citations.
P450-Inhibitor 50-100 uM	Father Nature's Farmacy: The aggregate of all these three-letter citations.
PGE2-Inhibitor	
PTK-Inhibitor 0.4-24 uM	
Pesticide	
Phospholipase-Inhibitor	
Plasmodicide	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Proliferant	
Prostaglandin-Synthesis-Inhibitor 40 ug/ml	Ibewuike, J. C., Ogungbamila, F. O., Ogundaini, A. O., Okeke, I. N., Bohlin, L. 1997. Antiinflammatory and Antibacterial Activities of C-methylflavonol from <i>Piliostigma thonningii</i> . <i>Phytotherapy Research</i> , 11(4): 281-284.
Protein-Kinase-C-Inhibitor	Naim, M., Zehavi, U., Nagy, S., and Rouseff, R.L. Hydroxycinnamic Acids as Off-Flavor Precursors in Citrus Fruits and Their Products. Phenolic Compounds in Food and Their Effects on Health, Ch.14.
Quinone-Reductase-Inducer 6 uM	Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In Vitro by Flavonoids. <i>Cancer Lett.</i> , 120 (2): 213-216.
Quinone-Reductase-Inducer 13 uM	
TNF-alpha-Inhibitor IC50=3.11 uM	
Teratologic	
Topoisomerase-I-Inhibitor IC50=12.8 ug/ml	
Topoisomerase-I-Inhibitor IC50=42 uM	
Topoisomerase-II-Inhibitor IC50=1-6.9 ug/ml	
Topoisomerase-II-Inhibitor IC50=23-40 uM	
Tumorigenic 0.1% diet orl rat/yr	Jim Duke's personal files.
Tyrosinase-Inhibitor ID50=70 uM	
Tyrosine-Kinase-Inhibitor	Economic & Medicinal Plant Research, 6: 170.
VEGF-Inhibitor	
Vasodilator	
Xanthine-Oxidase-Inhibitor IC50=>0.4 ug/ml	Chem. & Pharm. Bull. 38: 1772.
Xanthine-Oxidase-Inhibitor IC50=10.6 ug/ml	
Xanthine-Oxidase-Inhibitor 3.1 uM	
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
iNOS-Inhibitor IC50=20 uM	

QUERCETIN-DIGLUCOSIDE	Plant	--	--	Jim Duke's personal files.		
QUERCETIN-GLYCOSIDE	Plant	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.		
RIBOFLAVIN	Plant	3.0	18.0	0.46	*	

#### Activities (15)

AntiLyme 50 mg/day	
Antiarabiflavinotic 2-10 mg/day orl	Martindale's 28th
Anticarpal-Tunnel 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 15 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticephalagic	
Anticervicaldysplastic 1.6-10 mg/day	
Anticheilitic	
Antidecubitic	
Antiglossitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antikeratitic	
Antimigraine	

Antipellagic				
Antiphotophobic			Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.	
Cancer-Preventive			Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.	
<b>RUTIN</b>	<b>Plant</b>	--	--	*
<b>Activities (87)</b>				
5-HT-Inhibitor				
Aldehyde-Oxidase-Inhibitor IC27-52=10 uM				
Aldose-Reductase-Inhibitor 100 uM				
Aldose-Reductase-Inhibitor 4 ug/ml	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.			
Allelochemical				
AntiCVI 270 mg/man/day				
Antiaggregant ED50=33 nmol/kg iv				
Antiallergic				
Antiapoplectic				
Antiatherogenic				
Antiatherosclerotic				
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
Anticancer				
Anticapillary-Fragility 20-100 mg orl man	Merck 7th Ed.			
Anticataract				
Anticlastogen				
Anticonvulsant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.			
Antidementia	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.			
Antidermatitic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.			
Antidiabetic	Jin, G-Z., Yamagata, Y., and Tomita, K-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990.			
Antiedemic 270 mg/day orl man				
Antierythemic				
Antifeedant				
Antiglaucomic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.			
Antihematuric				
Antihemorrhoidal				
Antihepatotoxic	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.			
Antiherpetic	Economic & Medicinal Plant Research, 5: 198.			
Antihistaminic				
Antihypertensive	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.			
Antiinflammatory 20 mg/kg				
Antimalarial IC50=>100 ug/ml	Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. <i>Journal of Ethnopharmacology</i> , 15: 201-209, 1986.			
Antimelanomic				
Antimetastatic				
Antimutagenic ID50=2-5 nM				
Antinephritic				
Antinociceptive				
Antioxidant IC28=30 ppm				
Antioxidant IC50=120 uM				
Antioxidant IC54=10 uM				
Antiperioxidant IC50=10-20 uM				
Antiplatelet				
Antiproliferant 50-75 uM/l				
Antiprotozoal				
Antipurpuric				
Antiradicular 9 x quercetin				
Antispasmodic				
Antisunburn				
Antithrombogenic EC50=500 nM				
Antithyroid IC50=68 uM				
Antitrypanosomic 100 mg/kg	Planta Medica, 57: A44, 1991.			
Antitumor				

Antiulcer	
Antivaricose	
Antiviral	
Apoptotic 75 uM/l	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillariprotective	Merck 11th Edition
Catabolic	
Chemopreventive	
Cytoprotective IC50=3 uM	
Estrogenic?	Economic & Medicinal Plant Research, 6: 189.
Hemostat	
Hepatomagenic 20,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507 ACS, Washington 402 pp.
Hepatoprotective 20 mg/kg rat	
Hypocholesterolemic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Hypotensive	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Immunomodulator	
Insecticide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat IC95=4,000-8,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Lipoxygenase-Inhibitor IC75=2.5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690.
Mutagenic	Economic & Medicinal Plant Research, 6: 189.
Myoprotective	
Myorelaxant	Economic & Medicinal Plant Research, 6: 189.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
PAF-Inhibitor	
Pesticide	
Protisticide	
Radioprotective	
Sunscreen	
Topoisomerase-II-Inhibitor IC50=1 ug/ml	Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. <i>Antimicrobial Agents &amp; Chemotherapy</i> , 41: 992-998.
Vasodilator	
Vasopressor	
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

## SELENIUM

Plant    0.1    0.5    -0.41    \*

### Activities (60)

AP-1-Inhibitor 2-50 uM	
Analgesic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anorexic	Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.
AntiHIV	
AntiNF-kB	
Antiacne 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiaggregant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiangiogenic 2 uM	
Antiangiogenic 230 ug/kg orl rat	
Antiarthritic	
Antiasthmatic	
Antiatherosclerotic	
Anticataract 400 ug/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticirrhotic	
Anticlimacteric 200 ug/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticorony 200 ug/day	
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidepressant 200 ug/day	
Antidote (Mercury)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antifibrotic 400 ug	
Antigout 200 ug	
Antikeshan	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antileukotriene	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimaculitic	
Antimelanomic 480 ug/kg	
Antimenopausal 200 ug/day	
Antimetastatic 480 ug/kg	
Antimyalgic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiosteopathic	
Antioxidant 100-200 (-400) ug/man/day	
Antiparkinsonian 200-400 ug/day	
Antiproliferant 2 uM	
Antiradicular 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antirheumatic	
Antisyndrome-X 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitumor 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitumor (Breast) 333.6 ug/day	
Antitumor (Breast) 0.8 mg/kg scu mus	
Antitumor (Breast) 150 ug/kg diet rat	
Antitumor (Breast) 230 ug/kg orl rat	
Antitumor (Lung) 240 ug/kg diet	
Antitumor (Prostate)	
Antitumor (brain) 38-150 ug/kg	
Antiulcerogenic	Rafatullah, S., Tariq, M., Al-Yahya, M.A., Mossa, J.S., and Ageel, A.M. 1989. Evaluation of Turmeric ( <i>Curcuma longa</i> ) for Gastric and Duodenal Antiulcer Activity in Rats. <i>J. of Ethnopharmacology</i> , 29: 25-34, 1990.
Anxiolytic	
Apoptotic	
Cancer-Preventive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Cardioprotective 200 ug/day	
Depressant	Cooper-Driver, G. A. Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.
Fungicide	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Immunomodulator	
Immunostimulant 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
NF-kB-Inhibitor	
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Polyamine-Synthesis-Inhibitor	
Prostaglandin-Sparer	Fujita, T., Nakatani, E., Funaiishi, N., Sakuma, S., Fujimoto, Y. Potent inhibition of prostaglandin inactivation in rabbit gastric antral mucosal slices by selenium ions in-vitro. <i>J. Pharm. Pharmacol.</i> 42: 655-657, 1990.
Protein-Kinase-C-Inhibitor IC50=2-50 uM	
VEGF-Inhibitor	

**SILICON**

Plant 5.0 30.3 -0.36 \*

**Activities (4)**

Antiarteriosclerotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antonychotic	
Antiosteoporotic	
Cardioprotective	

**SODIUM**

Plant -- -- \*

**Activities (1)**

Hypertensive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
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**STIGMASTEROL**

Plant -- -- \*

**Activities (12)**

Antihepatotoxic	
Antiinflammatory	Lawrence Review of Natural Products, 1995
Antinociceptive	

Antioxidant IC33=10 uM	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Estrogenic	
Hypocholesterolemic	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Ovulant	
Sedative	

TANNIN Shoot -- -- Jim Duke's personal files.

#### Activities (35)

Anthelmintic	
AntiHIV	
Antibacterial	
Anticancer	
Anticariogenic	
Antidiarrheic	
Antidysenteric	
Antihepatotoxic	
Antihypertensive	
Antilipolytic	
Antimutagenic	
Antinephritic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antiphidic	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC50=1.44 ug/ml	
Antioxidant 1/3 quercetin	
Antiradicular 500 mg/kg/day orl mus	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antiradicular 1/3 quercetin	
Antirenitic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antitumor	
Antitumor-Promoter	
Antiulcer	
Antiviral	
Cancer-Preventive	HerbalGram No. 22 - Spring 1990, page 14.
Carcinogenic	
Chelator	
Cyclooxygenase-Inhibitor	
Glucosyl-Transferase-Inhibitor	
Hepatoprotective	
Immunosuppressant	
Lipoxygenase-Inhibitor	
MAO-Inhibitor	
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Psychotropic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Xanthine-Oxidase-Inhibitor	

TANNINS	Plant	--	124000.0	0.02	ANON. 1948-1976. <i>The Wealth of India</i> raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
THIAMIN	Plant	--	4.3	-0.28	Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing. Bountiful, Utah. 377 pp.

#### Activities (31)

Analgesic 1-4 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
AntiLyme 50 mg	
Antialcoholic 50-100 mg/day	
Antialzheimeran 100-3.000	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York. 443 pp.

Antianorectic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antibackache 1-4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiberiberi	
Anticanker	
Anticardiospastic	
Anticataract	
Anticolitic	
Antidecubitic	
Antideliriant	
Antidementia	
Antidyspeptic	
Antinecephalopathic	Martindale's 29th
Antifatigue	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antigastric	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antihangover 50 mg	
Antiheartburn	
Antiherpetic	
Antimigraine	
Antimyocarditic	
Antineuragic 1-4 g/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antineurasthenic	
Antineuritic	
Antineuropathic 50 mg	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antipoliomyelitic	
Insectifuge 75-150 mg/man/day	Martindale's 28th
Neuroprotective	
Pesticide	

THIAMINE	Plant	0.7	4.3	-0.33	*
TIN	Plant	1.2	8.0	-0.87	*

#### Activities (4)

Antiacne	
Antibacterial	
Pesticide	
Taenicide	Martindale's 28th

VANILLIC-ACID	Plant	--	--	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals.</i> CRC Press. Boca Raton, FL. 566 pp.
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#### Activities (24)

Aldose-Reductase-Inhibitor 100 uM/l	
Allelopathic	
Anthelmintic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antibacterial 1.5-15 mg/ml	Recio, M. C., Rios, J. L., and Villar, A. A review of some antimicrobial compounds isolated from medicinal plants reported in the literature 1978-1988, <i>Phytotherapy Research</i> , 3(4), 1989, 117-125.
Anticancer	
Antifatigue	
Antiinflammatory	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antioxidant IC21=30 ppm	
Antioxidant 1/3 BHA	
Antiperoxidant IC15-65=100-200 ug/ml	
Antiradicular 7 x quercetin	
Antiseptic	
Antisickling	Planta Medica, 56(6): 681, 1990.
Antitumor	
Antitumor-Promoter	
Ascaricide	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic	

Immunosuppressant					
Laxative	=ICMR(Indian Council of Medical Research),1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp				
Pesticide					
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				

WATER	Plant	--	846000.0	0.32	*
ZINC	Plant	0.5	3.5	-0.48	*

### Activities (77)

ACE-Inhibitor					
Analgesic					
AntiBPH 25-60 mg/day					
AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
AntiHIV					
Antiacne 135 mg/day					
Anticrodermatitic 8-34 mg/day/orl/chd	Martindale's 29th				
Antialcoholic					
Antialopecic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antialzheimeran 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiangiogenic					
Antianorexic	Martindale's 29th				
Antiarthritic 50 mg/3x/day/orl/man					
Anticanker 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Anticataract 30 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Anticoeliac	Martindale's 28th				
Anticold 50 mg	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Anticolic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Anticorony 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antidementia					
Antidiabetic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Antidote (Cadmium)	Let's Live, May 1989.				
Antidisgeuzic					
Antieczemic 150 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiencephalopathic	Martindale's 29th				
Antiepileptic 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antifibrotic 30 mg					
Antifuruncular 45 mg/3x/day/man	Martindale's 28th				
Antihangover 15 mg					
Antiherpetic? 25-60 mg/day					
Antiimpotence	Martindale's 29th				
Antiinfective 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiinfertility 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiinsomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antilepric	Martindale's 29th				
Antileukonychic					
Antilymphomeric					
Antimaculitic					
Antimetastatic					
Antineuropathic					
Antinyctalopic					
Antiobesity 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Antiosteoporotic					
Antiperiodontic					
Antiplaque	Martindale's 29th				
Antiprolactin	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiprostatic 50 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antirheumatic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antiseptic 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antispare-Tire 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Antistomatitic 50	Martindale's 28th				

Antisynthetic-X 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antitinitic 60-120 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antitriglyceride 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antiulcer 50 mg/3x/day/man	Martindale's 28th
Antiulcer 88 mg/rat/day/15 days	
Antiviral?	Martindale's 29th
Astringent	Martindale's 28th
Collagenic	
Copper-Antagonist	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Deodorant	Martindale's 29th
Detoxicant (Alcohol)	
Ergogenic	
Hypotensive 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Immunomodulator	
Immunostimulant	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Immunosuppressant 300 mg/day/6 wks/orl/man	Martindale's 29th
Insulinogenic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Leptogenic 30-60 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Mucogenic	Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. <i>J. Pharm. Pharmacol.</i> 42: 657-659, 1990.
NF-κB-Inhibitor	
Pesticide	
Spermigenic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Testosteronogenic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Trichomonicide	Martindale's 29th
Vulnerary	Martindale's 28th